

March 19, 2001

**U.S. Fish and Wildlife Service
Issues
for
Oroville Facilities Relicensing**

The following is a preliminary list of issues related to the Fish and Wildlife Service's (FWS) substantive, procedural, and psychological interests. In addition, there are other issues related to the physical, chemical, and biological components of the ecosystem affected by the Oroville Facilities. These issues have known or potential adverse cause and effect relationships that occur under the current operations of the FERC licensed Oroville facilities or that could occur under a new licensed project. This list is not complete and represents those issues identified in the brief amount of time allowed for issues development. We expect to submit additional issues in the next 30 days.

Substantive Issues

1. Operation and maintenance of the Oroville Facilities affects species and habitat that fall within the Trust Responsibilities of the FWS. These include anadromous fish, migratory waterfowl, wetlands, riparian vegetation, and federally-listed endangered, threatened and proposed species. Inappropriate changes to license conditions could adversely impact these species and/or habitats and impact FWS responsibilities. The FWS wants to assure that conservation and protection for these species and habitats occurs under new license conditions.
2. The existing FERC license for the Oroville Facilities was issued more than 30 years ago. Since then, the project has been modified, gone through many environmental reviews and completed various mitigation measures. In spite of these actions, there have not been comprehensive efforts to analyze the effects of the project from an ecosystem perspective, and steps taken to assure conservation of biodiversity, environmental sustainability and long-term maintenance of a fully functioning ecosystem with structure and composition that is compatible with sustainable socioeconomic use. The FWS wants to assure that such comprehensive efforts are taken and that conservation, protection and enhancement of fish and wildlife and their habitats are maintained under new license conditions.

Procedural Issues

1. The State of California's Department of Water Resources (licensee) operates the Oroville Facilities under FERC license #2100 in compliance with numerous

Articles required by the FERC. The licensee also is required to abide by numerous other local, State and Federal laws and mandates. The FWS has several legal mandates under the Federal Power Act (FPA), Fish and Wildlife Coordination Act (FWCA), Endangered Species Act (ESA), National Environmental Policy Act (NEPA) and other laws to guide our participation in the ALP relicensing process. The FWS is concerned that the Protection, Mitigation, and Enhancement measures (PM&E) developed in any settlement may not fully address the above laws and mandates. The FWS seeks assurance that any settlements are consistent with these required mandates.

2. The FWS has adopted an ecosystem approach for resource conservation, protection and enhancement. This approach has contributed to successful settlement of numerous hydroelectric proceedings in California over the past few years. This approach requires taking a holistic, ecosystem-wide view of the project affected area, taking into account both direct, indirect and inter-related project effects in developing studies and resource goals and objectives. The FWS is concerned that the myriad of constraints existing for this project may hamper ecosystem approach efforts. The FWS seeks assurance that an ecosystem approach will be employed in this ALP process.
3. The FWS is obligated to make its determinations for resource protection on best available science and must document rationale for recommended protection measures in this ALP process. We are concerned that in the interest of accelerating the pre-filing process, the collaborative may not allow sufficient time for gathering the necessary scientific data for making well founded determinations. The FWS seeks assurance that sufficient studies of appropriate rigor and content will be completed before any settlements are completed and before our determinations must be made.
4. The FPA provides the FERC with exclusive authority to license nonfederal water power projects on navigable waterways and federal lands. The FERC issues licenses for up to 50 years for constructing, operating, and maintaining nonfederal hydropower projects. The FWS recognizes the difficult if not impossible task of determining fail safe protective license conditions over such a lengthy period, considering all of the societal and environmental changes likely to occur. The FWS will be seeking assurance that there will be provisions in any settlement or license that allow for necessary adaptive changes to accomplish conservation and protection of fish and wildlife resources over the term of the license.
5. The DWR has elected and been given approval to use the ALP process for the pre-filing portion of the FERC's licensing process. The intent of the ALP is to foster resolution of various issues by interested participants. The resolution of issues are documented in a settlement agreement that is filed for consideration by the FERC.

The FWS is concerned that the settlement may not include both short-and long-term solutions developed through a methodical identification of goal(s) objectives, and measures using an ecosystem approach founded on resource agency mandates and collaborative contributions. The FWS seeks assurance that an ecosystem approach founded on resource agency mandates and collaborative contributions will be employed and therefore our concerns for conservation and protection will be addressed in the new license conditions.

Psychological Issues

1. The DWR with FERC approval is using the ALP process seeking resolution of agency, public and private issues. There have been strong views expressed by local participants about past mistreatment and failed vision of the Oroville Facilities to bring about certain socioeconomic benefits. This ALP collaborative offers opportunity to build mutual trusts, and develop long-term cooperative relationships. These mutual trusts are essential for issues resolution. Personal and agency consistency are also essential to success of the collaborative. Any settlement must be built upon clear understanding of the issues, mutual agreement to solutions and personal and agency consistency and commitment to implementation of license conditions. The FWS is seeking settlement that sets a model precedent for others.

Project Operations and Engineering Issues

1. Operations and engineering of the project determine the manner and extent water is moved into, through and out of the project area. Current operations which affect timing, magnitude and duration of flow from current release schedules, pumpback scheduling and maintenance schedules impact both lotic and lentic ecosystems affected by the project. Operations need to be examined and their impacts evaluated and minimized for inclusion into terms and conditions of the settlement.

Comprehensive Hydrology

1. Hydrology information defines the amount and timing of water that is delivered to and away from the project. Natural hydrology has been altered by project operations and water delivery schedules. Detailed hydrological analysis by water year type and season is necessary to examine project impacts. Concerns are: 1. Current effects to the ecosystem from impaired hydrograph and 2. Restoration of a more natural hydrograph given operational constraints.

Water Quality

1. One of the most significant environmental changes caused by the Oroville Facilities Project was changing the nature of this relatively low elevation waterway from a lotic to lentic system. The confluence of three tributaries of the Feather River and its free flowing nature has been replaced by Lake Oroville. The transport functions (sediment, nutrients etc.) normally associated with the energy of a lotic system have been replaced by an overall storage function of a lentic system. Thus, there are water quality changes accompanying this shift of ecosystems both within and downstream of the lake. The FWS is concerned about the effects of the current project operations on water quality and changes that may occur with new license conditions. We seek assurance that sufficient number of water quality constituents are investigated and that appropriate rigor of protocols are followed. We seek assurance that investigations will lead to determination of operations alternatives that balance and maintain acceptable water quality standards under all operational plans and conditions set forth in the final agreement.

Fluvial Geomorphology

1. Natural geomorphological processes historically occurred within the Feather River watershed and are the result of geologic and hydrologic processes such as weathering, erosion, runoff patterns, material transport and deposition. Project features and operations have altered these natural geomorphic processes. Alteration of these geomorphic processes has affected the riverine habitat and species that depend on it. The FWS is concerned that project operations may have taken us beyond some critical thresholds for ecosystem sustainability. We are concerned that maintenance of a satisfactory abiotic template, e.g. substrate used for invertebrate production and fish spawning is not occurring. The FWS wants assurance that new license conditions will allow for minimum thresholds of geomorphic processes to take place thus ensuring sufficient natural sediment movement and a satisfactory abiotic habitat template are in place.

Riparian Vegetation

1. Riparian areas have been altered or affected by project construction. Riverine riparian zones have been replaced by reservoir shoreline zones and downstream riverine riparian areas have been altered by the project. Reservoir operations and recreational use issues continue to impact existing riparian areas both in and out of the Project area. Concerns are that sufficient characterization and management techniques be implemented such that effective riparian stabilization, restoration and enhancement measures can be achieved.

Terrestrial Resources

1. There are a wide variety of terrestrial fauna and flora supported by and occurring within the project area. These species and their habitat add greatly to the resource base. Participants in the collaborative have expressed interest in optimizing the resource benefits to improve socioeconomic conditions in the Oroville vicinity. The FWS is concerned that

current license conditions are not adequate to protect terrestrial species and habitat occurring in the project-affected area. We are also concerned that less protective measures could be put in place unless careful thought is given to balancing the various resource needs and recognizing the terrestrial wildlife and flora should be given high priority for protection and sustained conservation. The FWS seeks assurance that comprehensive and well crafted planning will be done to protect and conserve terrestrial fauna and flora resources.

Aquatic Resources

1. The lower Feather River provides habitat to support a variety of anadromous fish species including chinook salmon, steelhead, striped bass, American shad and sturgeon. Potential changes in license conditions could adversely impact habitat supporting these species. The FWS seeks assurance that habitat investigations will evaluate the existing quality and quantity of habitat and determine alternative improvements for the various life history needs of anadromous species including flow, water temperature, instream and riparian cover, substrate and spatial area.
2. The lower Feather River provides habitat to support a variety of resident native and resident introduced species including coldwater species such as rainbow, brook and brown trout, and warmwater species such as bass, catfish, bluegill, green sunfish, and carp and others. Potential changes in license conditions could adversely impact habitat supporting these species or upset habitat conditions such that less desirable species be favored. The FWS seeks assurance that habitat investigations will evaluate the existing quality and quantity of habitat and determine alternative improvements for the various life history needs of these resident native and non-native species including flow, water temperature, instream and riparian cover, substrate and spatial area.
3. The habitat for fishes in the lower Feather river is affected by the flow releases from the project. Seasonal timing, volume, and rate of release all have an affect on fish habitat conditions. Potential changes in license conditions for flow releases could adversely affect habitat conditions for one or more fish species. The FWS seeks assurance that fishery investigations will examine the adequacy of flows for maintaining all life history needs for anadromous and resident species. There should be evaluation of potential for flow improvements in the low flow section. The FWS seeks assurance that the fishery investigations will be sufficient to determine how best to meet the combined needs of the various anadromous and resident fish species.
4. Fish passage is an essential survival element for anadromous species and obstructed passage can also have serious adverse impact on resident species biodiversity and populations. Both upstream and downstream unobstructed fish passage below the project should occur. The FWS seeks assurance that fishery investigations will examine the adequacy of passage for all species in the reaches of the lower Feather River downstream

of the project. Evaluations should cover sufficient range of flows and include examination of instream pits or gravel ponds.

5. Predation on fish species naturally occurs under all conditions. However, project conditions could exacerbate the occurrence of predation on certain species. Changes in license conditions could lead to unnecessary increase in predation on desirable gamefish or T&E or other species of concern. Occurrence (habitat, distribution and numbers) of predator fish should be identified in all riverine waterways affected by project releases. The FWS seeks assurance that predation investigations will be comprehensive and predator management be available as a fishery management tool.
6. Oroville Reservoir provides substantial recreational fishing opportunity for both black bass and chinook salmon fisheries. Hatchery planting practices for chinook salmon could be impacting habitat conditions and the population dynamics of black bass and other species thus impairing socioeconomic use. Fishing interests want to improve the reservoir fishery so that it becomes a more popular recreational destination as a result of a successful balanced species reservoir fishery. FWS wants to assure that appropriate balance of species in the reservoir occurs assure environmental sustainability and long-term maintenance of a healthy ecosystem.
7. The Feather River Hatchery was constructed to mitigate for losses of upstream habitat when the Oroville Facilities were constructed. There is a body of evidence that improperly planned hatchery practices can adversely impact native and non-native species including anadromous species. The effects of hatchery practices on naturally reproducing/self-sustaining anadromous populations should be examined as part of the fishery investigations. These evaluations should examine alternative practices that would lead to increased naturally reproducing/self-sustaining anadromous populations. Improper hatchery practices can also lead to transmission of serious fish diseases, and impact overall susceptibility of naturally reproducing populations to diseases.
8. Oroville Facilities operate to achieve multipurpose functions, including flood control, water supply, power generation, fish and wildlife enhancement and recreation. Because the Oroville Facilities operate for many purposes, activities undertaken for any one purpose may have adverse effect on one or more of the other purposes. Discretionary release of water in high volume at ill-timed seasonal periods has substantial harmful effects on aquatic resources. These ill-timed releases could cause long-term impacts to fish and wildlife habitat and populations. FWS wants to assure that reservoir releases promote environmental sustainability and provide the best balance of conditions for both reservoir and downstream fish and wildlife resources.

Endangered, Threatened, Proposed, Species of Concern

1. As described in the IIP, operations of the Oroville Facilities including Lake Oroville, have wide-reaching effect on riverine conditions downstream in the Feather River, Sacramento River, and San Francisco/San Joaquin Bay Delta. In addition, water supply stored in Lake Oroville is delivered to Southern California through State Water Project canals and thus has effects on growth and development within the SWP service area. There are a variety of federally listed, threatened, proposed and species of concern that occur within and are supported by suitable habitat in the project affected area. There is potential for license condition changes that could potentially adversely impact listed, proposed, and/or species of concern in areas affected by water supply deliveries (including transfers), flood control, recreation activities and other project operations. The FWS wants to assure that future license conditions and attendant PM&E measures protect listed and proposed species, assist in their recovery and prevent future listings of any species of concern that may be at risk.
2. As followup to the above paragraph, the operations of the Oroville Facilities are integrally linked to federal water project operations and those of other entities in the Central Valley. Coordinated decisions for water project operations, including Lake Oroville take place on a daily basis. FWS wants to assure that areal extent of investigation and content of the scope of analysis is sufficient so that ESA requirements are fully addressed with regards to direct, indirect, cumulative, interrelated and interdependent activities. This means examining all facets of project features such as distribution and transmission lines and how their operations/maintenance practices may affect T&E species.

The FWS also wants to assure that an appropriate level of rigor is applied to the aforementioned investigation. For example sufficient surveys (general and site specific) must be conducted to determine presence of potential habitat and/or species occurrence in a manner according to FWS protocols.

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